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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DAILEY, THOMAS J	
ART UNIT	**PAPER NUMBER**
2152	
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04/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/659,942	SHAPIRO ET AL.	
	Examiner	Art Unit	
	THOMAS J. DAILEY	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 14-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6 and 14-17 are pending.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/13/2007 has been entered.

Response to Arguments

3. The U.S.C. 112 second paragraph rejections directed at claims 1-6 and 14-17 have been withdrawn in view of the entered amendments.

4. Applicant's arguments with respect to claims 1-6 and 14-17 have been considered but are moot in view of the new ground(s) of rejection.

5. The entered amendment necessitated new U.S.C. 112 first and second paragraph rejections and a specification objection. See below.

Specification

6. The amendment filed December 13, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35

U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "wherein the zone weight at each fault zone is an indicator of the number of possible paths that will traverse that fault zone, and wherein the zone weight *enables routing decisions independent of network traffic"* (emphasis added, claim 1, line 13; claim 45, lines 14; claim 5, lines 17-18; claim 6, lines 19-20; and claim 14, lines 19-20). The applicant has pointed page 1, lines 17-26 and page 7, lines 1-25 of the specification as supporting this claim amendment. However, the examiner did not find adequate support for this amendment. The negative limitation, "enables routing decisions independent of network traffic" is broadly worded and does not contain specific support in the specification. The examiner further points to the applicant remarks submitted December 13, 2007, "This is independent of the network traffic at any given instant, since it particularly identifies **the potential load on various nodes as a result of the particular network path configuration**." (page 10, 4th paragraph) Since, the invention relies on potential load (i.e. potential network traffic) as a means to enable routing decisions it cannot reasonably be interpreted as independent of network traffic. The examiner suggests the applicant use phrasing consistent with the specification when amending the claims and not rely on negative limitations. For this particular limitation, calculating the zone weight in this manner, as the applicant pointed out in the response, enables routing

decisions to be made dependent upon potential network traffic and the current path configuration between the first network node and the second network node.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph and second paragraphs of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-6 and 14-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added material which is not supported by the original disclosure is as follows: "wherein the zone weight at each fault zone is an indicator of the number of possible paths that will traverse that fault zone, and wherein the zone weight *enables routing decisions independent of network traffic"* (emphasis added, claim 1, line 13; claim 45, lines 14; claim 5, lines 17-18; claim 6, lines 19-20; and claim 14, lines

19-20). The applicant has pointed page 1, lines 17-26 and page 7, lines 1-25 of the specification as supporting this claim amendment. However, the examiner did not find adequate support for this amendment. The negative limitation, "enables routing decisions independent of network traffic" is broadly worded and does not contain specific support in the specification. The examiner further points to the applicant remarks submitted December 13, 2007, "This is independent of the network traffic at any given instant, since it particularly identifies **the potential load on various nodes as a result of the particular network path configuration**." (page 10, 4th paragraph) Since, the invention relies on potential load (i.e. potential network traffic) as a means to enable routing decisions it cannot reasonably be interpreted as independent of network traffic. The examiner suggests the applicant use phrasing consistent with the specification when amending the claims and not rely on negative limitations. For this particular limitation, calculating the zone weight in this manner, as the applicant pointed out in the response, enables routing decisions to be made dependent upon potential network traffic and the current path configuration between the first network node and the second network node.

9. Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 5 recites, "for each of the multiple identifiers of the second node, selecting as the current routing path from the first node to the second node identified by the said multiple identifier, from said set of paths the path having the least path weight." (lines 21-24) The language of this particular limitation renders the claim unclear. Firstly, "the said multiple identifier" lacks antecedent basis as the claim recites "multiple identifiers" (i.e. it is not singular) beforehand. Secondly, it seems to the examiner extraneous to recite, "the second node *identified by the said multiple identifier*" (emphasis added) as it has already been established that the second node has multiple identifiers (see claim 5, lines 8-9) and its recitation again only makes this particular limitation more difficult to interpret.

11. Claim 6 recites, "for each of the multiple identifiers of the second node, selecting as the current routing path from the first node to the second node identified by the said multiple identifier, from said set of paths, the path having the least path weight." (lines 23-26) The language of this particular limitation renders the claim unclear. Firstly, "the said multiple identifier" lacks antecedent basis as the claim recites "multiple identifiers" (i.e. it is not singular) beforehand. Secondly, it seems to the examiner extraneous to recite, "the second node is *identified by the said multiple identifier*" (emphasis added) as it has already been established that the

second node has multiple identifiers (see claim 6, lines 10-11) and its recitation again only makes this particular limitation more difficult to interpret.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1-6 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parham et al (US Pat. 6,879, 564), hereafter "Parham," in view of Bertin et al (US Pat. 5,940,372), hereafter "Bertin."

14. As to claim 1, Parham discloses a processor-implemented method for enabling communication between a first and a second node in a network by routing network traffic through fault zones in the network (Abstract), the method comprising:

identifying a path from a first network node to a second network node, wherein the path is a possible routing path for communication between the first and second node (Fig. 3c, and column 4, lines 54-68, the bold faced path (path) between the server with label 150 (first node) and the server with label 158 (second node));

identifying a set of fault zones through which the identified path passes (column 4, lines 54-58 and Fig. 3c);

for each fault zone in the set of fault zones, assigning a zone weight, and wherein the zone weight enables routing decisions independent of network traffic (column 4, lines 54-58 and column 4, lines 33-39 indicates how weights may be calculated);

calculating a path weight for the identified path, wherein said path weight is equal to the sums of said zone weights for each fault zone included in the identified path (column 4, lines 54-67); and

selecting the identified path as the current routing path for routing the network traffic from the first node to the second node (column 4, lines 54-67).

whereby communication form the first node to the second node is enabled along the selected path (column 4, lines 54-67)

But, Parham does not disclose that the zone weight is the number of paths from the first network node to the second network node that include said fault zone. Parham discloses where the zone weight is related to cost but nothing is explicitly recited that cost is a function of the number of paths between the two nodes that includes the fault zone.

However, Bertin discloses zone weights based upon the number of established routing paths between two nodes, wherein the zone weight is

determined from the path configuration of the network (column 6, lines 22-35). Specifically, Bertin teaches links (zones) are weighted according to how much reserved bandwidth and traffic they carry. From this teaching, the conclusion can be made that the weight of the links is clearly dependent on the number of paths, when giving "paths" the broadest reasonable interpretation. Therefore, reserved bandwidth and traffic from Bertin read on "paths", (i.e. the more traffic, the greater the number of logical data paths, and the more reserved bandwidth, the greater the number of reserved paths).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin in order to use a weighted routing algorithm that takes into load balancing so as to avoid an uneven distribution of network traffic.

15. As to claim 4, it is rejected by the same rationale set forth in claim 1's rejection.

16. As to claim 5, Parham discloses a processor-implemented method for enabling communication between a first and a second node in a subnet by routing network traffic through fault zones in the subnet (Abstract), the method comprising:

identifying multiple fault zones in the subnet, each fault zone comprising one or more components of the subnet (column 4, lines 54-67 and Fig. 3c where the links read on the fault zones and the graph reads on the subnet);

configuring a central subnet manager to manage routing between nodes in the subnet (Abstract);

identifying a set of paths from a first node having a first identifier to a second node having multiple identifiers, including a second identifier, wherein the set of paths are possible routing paths for communication from the first node to the second node using any of the multiple identifiers (column 4, lines 54-67 and Fig. 3c, label 150 (first node) and label 158 (second node));

for each fault zone traversed by one or more of the paths, establishing a zone weight, wherein the zone weight enables routing decisions independent of network traffic (column 4, lines 54-67, and column 4, lines 33-39 indicates how weights may be calculated);

for each path in the set of paths, establishing a path weight from the sums of the zone weights for each fault zone traversed by said path (column 4, lines 54-67); and

for each of the multiple identifiers of the second node, selecting as the current routing path from the first node to the second node identified by said multiple identifier, from said set of paths, the path having the least path weight (column 4, lines 54-67).

whereby communication form the first node to the second node is enabled along the selected path (column 4, lines 54-67)

But, Parham does not disclose that the zone weight is based upon the number of paths from the first network node to the second network node that include said fault zone. Parham discloses where the zone weight is related to cost but nothing is explicitly recited that cost is a function of the number of paths between the two nodes that includes the fault zone.

However, Bertin discloses zone weights based upon the number of established routing paths between two nodes, wherein the zone weight is determined from the path configuration of the network (column 6, lines 22-35). Specifically, Bertin teaches links (zones) are weighted according to how much reserved bandwidth and traffic they carry. From this teaching, the conclusion can be made that the weight of the links is clearly dependent on the number of paths, when giving "paths" the broadest reasonable interpretation. Therefore, reserved bandwidth and traffic from Bertin read on "paths", (i.e. the more traffic, the greater the number of logical data paths, and the more reserved bandwidth, the greater the number of reserved paths).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin

in order to use a weighted routing algorithm that takes into load balancing so as to avoid an uneven distribution of network traffic.

17. As to claim 6 and 14, they are rejected by the same rationale set forth in claim 5's rejection.

18. As to claim 2, Parham and Bertin disclose the invention substantially with regard to the parent claim 1, and further disclose:

identifying a new path from the first network node to the second network node (Parham, column 4, lines 54-65);

assigning zone weights to each fault zone in the new path (Parham, Fig. 3c);

calculating a new path weight for the new path (Parham, column 4, lines 54-65); and

if the new path weight is lower than said path weight for the identified path, selecting the new path as the current path for network traffic from the first node to the second node (Parham, column 4, lines 54-65).

19. As to claim 3, Parham and Bertin disclose the invention substantially with regard to the parent claim 1, and further disclose:

the first network node is identified by a first identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 150, will inherently have an identifier);

the second network node is identified by multiple identifiers, including a second identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 158);

selecting the identified path as the current path for network traffic from the first node to the second node comprises selecting the identified path the current path for network traffic from the first node to the second node, wherein the second node is identified by the second identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 158); and

paths other than the identified path are selected as the current paths for network traffic from the first node to the second node, wherein the seoncd node is identified by multiple identifiers other than the second identifier (Parham, column 4, lines 54-65 and Fig. 3c).

20. As to claim 15, Parham and Bertin disclose the invention substantially with regard to the parent claim 14, and further disclose the client computing device further comprises: a memory configured to store path weights of current paths between multiple pairs of node identifiers (Parham, column 3, lines 40-47 and as the weights are used in calculations in column 4, lines 54-65, they will inherently be stored in this memory).

21. As to claim 16, Parham and Bertin disclose the invention substantially with regard to the parent claim 15, and further disclose the memory is further configured to store, in association with each of the current paths, zone

weights for fault zones traversed by the current path (Parham, column 4, lines 54-65).

22. As to claim 17, Parham and Bertin disclose the invention substantially with regard to the parent claim 14, and further disclose the subnet manager is further configured to disseminate routing information to a plurality of nodes in the subnet, said routing information including said current path from the first identifier to the second identifier (Parham, column 5, lines 1-8).

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Dailey whose telephone number is 571-270-1246. The examiner can normally be reached on Monday thru Friday; 9:00am - 5:00pm.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. J. D./
Examiner, Art Unit 2152

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2152